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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,626	12/17/2001	Tohru Takahashi	217190US2S	7544

22850 7590 02/03/2003

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EXAMINER
COLON, GERMAN

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 02/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	10/015,626	TAKAHASHI ET AL.	
	Examiner	Art Unit	
	German Colón	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,7 and 9-14* is/are rejected.

7)☒ Claim(s) *2-5,8 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6, 7, and 9-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto (US 5,079,477).

Regarding claim 1, Yamamoto discloses a CRT comprising:

a panel provided with a phosphor screen **2**;

an electron gun **1** for emitting an electron beam toward the phosphor screen; and a shadow mask assembly **3** including (see Fig. 7) a shadow mask body having a rectangular effective portion opposed to the phosphor screen and formed having a large number of electron beam passage apertures, the effective portion having a major axis and a minor axis passing through the center thereof and extending at right angles to each other,

a mask frame to which the periphery of the shadow mask is fixed (see Col. 3, lines 61-62) and

an auxiliary mask in the form of a strip extending in the direction of the minor axis, fixed to a region containing the minor axis of the effective portion and having a number of electron beam passage apertures communicating individually with the electron beam passage apertures of the effective portion (see Fig. 1).

Regarding claim 6, Yamamoto discloses said auxiliary mask being formed of a material having a coefficient of thermal expansion substantially equal to that of the material of the shadow mask body (see Col. 3, lines 58-60).

Referring to claim 7, Yamamoto discloses said auxiliary mask having a thickness equal to or greater than that of the shadow mask body (see Figs. 5a-6d).

Referring to claim 9, Yamamoto discloses each electron beam passage aperture of the auxiliary mask having an aperture diameter larger than that that of each electron beam aperture of the shadow mask with respect to the direction of the major axis (see Fig. 6d).

Regarding claim 10, Yamamoto discloses said auxiliary mask (see Fig. 6a) being provided on the electron-gun side of the shadow mask body, and the space between the electron beam passage apertures of said auxiliary mask is smaller than the space between the electron beam passage apertures of the shadow mask body with respect to the direction of the minor axis (see Fig. 1 in view of Col. 4, lines 23-25).

Regarding claim 11, Yamamoto discloses each electron beam passage aperture of the shadow mask body being formed of a larger hole opening on the phosphor-screen side and a smaller hole opening on the electron-gun side, and each electron beam passage aperture of the auxiliary mask being formed of a smaller hole opening on the phosphor-screen side and a larger hole opening on the electron-gun side (see Fig. 6a).

Referring to claim 12, Yamamoto discloses said auxiliary mask (see Figs. 6d and 5b) being provided on the phosphor-screen side of the shadow mask body, and the space between the electron beam passage apertures of said auxiliary mask is greater than the space between the

electron beam passage apertures of the shadow mask body with respect to the direction of the minor axis (see Fig. 1 in view of Col. 4, lines 23-25).

Referring to claim 13, Yamamoto discloses each electron beam passage aperture of the shadow mask body being formed of a larger hole opening on the phosphor-screen side and a smaller hole opening on the electron-gun side, and each electron beam passage aperture of the auxiliary mask being formed of a larger hole opening on the phosphor-screen side and a smaller hole opening on the electron-gun side (see Figs. 6d and 5b).

Referring to claim 14, Yamamoto discloses a shadow mask body having a plurality of aperture arrays extending in parallel to the minor axis and arranged at spaces in the direction of the major axis, each of the apertures arrays including electron beam passage apertures arranged in the direction of the minor axis and bridge portions situated between adjacent electron beam passage apertures (see Figs. 2 and 3), and

said auxiliary mask having a plurality of apertures of aperture arrays extending in parallel to the minor axis and arranged at spaces in the direction of the major axis, each of the apertures arrays including electron beam passage apertures arranged in the direction of the minor axis and bridge portions situated between adjacent electron beam passage apertures,

each of the electron beam passage apertures of the auxiliary mask having a minor-axis-direction diameter twice or more as large as the minor-axis-direction diameter of each electron beam passage aperture of the shadow mask body (see Col. 4, lines 23-25), the minor-axis-direction space between the electron beam passage apertures of the auxiliary mask being twice as along as the minor-axis-direction space between the electron beam passage apertures of the shadow mask body,

the bridge portions of the auxiliary mask being superposed individually on the bridge portions of the shadow mask body.

The Examiner notes that Yamamoto teaches the ratio of displacement of the bridges **6a** and **6b** could be any integer-to-integer ratio, thus a ratio of 1:3 (in view of Fig. 3) will provide the bridge portions of the auxiliary mask being superposed on the bridge portions of the shadow mask body.

Allowable Subject Matter

3. Claims 2-5, 8 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

The Examiner notes that the Prior Art of Record discloses a CRT comprising: a panel provided with a phosphor screen; an electron gun for emitting an electron beam toward the phosphor screen; and a shadow mask assembly including a shadow mask body having a rectangular effective portion opposed to the phosphor screen and formed having a large number of electron beam passage apertures, the effective portion having a major axis and a minor axis passing through the center thereof and extending at right angles to each other, a mask frame to which the periphery of the shadow mask is fixed and an auxiliary mask in the form of a strip extending in the direction of the minor axis, fixed to a region containing the minor axis of the

effective portion and having a number of electron beam passage apertures communicating individually with the electron beam passage apertures of the effective portion.

Regarding claim 2, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claim 2, and specifically comprising the limitation of: "an auxiliary mask being fixed to a region having a width equal to about 1/3 of the length of the shadow mask body in a direction of the major axis and situated in a longitudinal central region of the effective portion containing the minor axis.

Regarding claims 3-5 and 8, claims 3-5 and 8 are allowable for the reasons given in claim 2 because of their dependency status from claim 2.

Referring to claim 15, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in claim 15, and specifically comprising the limitation of: "the effective portion of the shadow mask body having a superposed region overlapping the auxiliary mask and a non-superposed region situated outside the superposed region, a minor-axis-direction space between the electron beam passage apertures in the superposed region being twice as long as the minor-axis-direction space between the apertures in the non-superposed region, the minor-axis-direction space between the apertures of the auxiliary mask being twice as long as the minor-axis-direction space between the apertures in the non-superposed region, the bridge portions of the shadow mask being shifted in the direction of the minor-axis by a margin equal to ½ of the minor axis direction space between the apertures of the auxiliary mask.

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Roberts, in U.S. Patent No. 4,293,792, discloses a shadow mask with apertures in the screen side and electron-gun side in a pattern such that the electron-gun side aperture diameter is twice as large than the screen side diameter (see Fig. 7).

Takenaka et al., in U.S. Patent No. 4,392,914, discloses a shadow mask assembly comprising an auxiliary mask that has a longer effective area than that of the mask.

Thoms et al., in U.S. Patent No. 5,686,784, discloses a mask comprising two plates of different thickness.

Hattori et al., in U.S. Patent No. 4,996,458, discloses a shadow mask comprising two or more plates of different thickness.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 703-305-5987. The examiner can normally be reached on Monday thru Friday, from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 703-305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

gc
January 24, 2003

MICHAEL H. DAY
PRIMARY EXAMINER